March 5, 2009

To: Connecticut General Assembly – Public Health Committee
From: Michelle M. Forman, Government Affairs Manager, Center for Science in the Public Interest

Re: Senate Bill 1080 – An Act concerning access to health and nutritional information in restaurants

The Center for Science in the Public Interest is based in Washington, D.C., and has over 14,400 members and subscribers in Connecticut. Among other things, CSPI led the effort to win passage of the law requiring nutrition labeling on packaged foods, to add trans fat to those labels, and we are currently leading the national effort for menu labeling in chain restaurants.

We commend the Public Health Committee for introducing SB 1080, and we strongly urge the Committee to pass menu labeling in Connecticut.

Providing nutrition information on menus is an important way to address one of the nation's fastest growing and most costly health problems, obesity. Rates have doubled in adults and tripled in children and teens over the last three decades.

Requiring restaurants to post calorie information on menus would allow residents of Connecticut to make informed decisions about their own health by providing them with information that is sorely lacking at most restaurants. With two-thirds of Americans overweight or obese, we need to give people a fighting chance at eating better and maintaining a healthy weight.

Although restaurants provide a range of menu choices, without nutrition information, it can be difficult to compare options and make informed decisions. For example, at Starbucks your coffee might have anywhere from 10 to almost 800 calories. Few people would guess that a plain bagel (370 calories) without cream cheese at Dunkin' Donuts has 120 more calories than a jelly filled donut (250 calories). And few would guess that at D'Angelos the chicken cobb wrap (910 cals) has 200 more calories than the chicken club wrap (710 cals).

People know that a small serving has fewer calories than a large one, but it is very difficult to accurately estimate the calorie content of restaurant meals. A study conducted by the Center for Science in the Public Interest and New York University found that even well-trained nutrition professionals cannot accurately estimate the calorie content of typical restaurant meals. They consistently underestimated the number of calories, and the underestimates were substantial – by 200 to 600 calories. For example, when shown a typical dinner-house hamburger and onion rings, the dietitians estimated that it had 865 calories, when it actually contained about 1,500 calories.

Statewide surveys in California and Connecticut show that identifying healthier choices at restaurants is very difficult for consumers. The California poll found that two-thirds (68%) of respondents were unable to answer even one question (of four questions) correctly, and scores were equally poor regardless of education or income levels. Importantly, other research

indicates that the provision of nutrition information for restaurant foods helps people to make healthier choices (see attached list of studies).

The current system of voluntary labeling at restaurants is not working. Half of the largest chain restaurants do not provide any nutrition information to their customers. The restaurants that do provide information generally provide it on websites, which have to be accessed outside of the restaurant, on hard-to-find, difficult-to-read posters or brochures, or on tray liners or fast-food packages, which people do not see until after they order.

Yet restaurants know that providing information on menus is the most effective way of sharing information with its customers. The Burger King Corporation wrote that "the menu board is the single most valued piece of real estate in a Burger King restaurant. It is the most important way we communicate with our customers in the store about the products we offer and their price; it is what our customers look at, and it is what stimulates their decision to buy."[i] Menu boards are what customers read while they are standing in line to place their orders and where they get their information about what to order, including a listing of menu options, product descriptions, and price.

To be effective, nutrition information in restaurants must be simple, easy to use, and in a relatively consistent format at different restaurants. Only by posting information on menus and menu boards is the information seen at the point of decision-making in a format that is easy to understand, easy to find and allows comparisons to be simply made, when the customer is choosing what to order. Furthermore, providing this information on menus and menu boards creates a standard that consumers can begin to rely on, familiarize themselves with, and easily use. If some restaurants have posters, others brochures, others kiosks, stanchions, and trayliners, customers will have trouble tracking down nutrition information even if the restaurant provides it.

Although the provision of nutrition information at restaurants is spotty, the fact that approximately half of chain restaurants do have it shows that providing nutrition information for restaurant foods is feasible, practical, and affordable – despite some restaurants' claims to the contrary. If a restaurant can provide nutrition information on a website, it should be able to put those calorie numbers on their menu boards and menus, where people can find them and use them when ordering.

Menu labeling is particularly important in our current economic situation. The *Journal of the American Medical Association* recently published an article that explains that in "times of economic weakness and/or rising costs, consumers tend to trade down to lower price points than prepare food at home."[ii] Additionally, experts see decreases in gym memberships and athletic leagues as people cut spending. Our current economic crisis puts people's health more at risk. *Reuters* quoted the Director of the Nutrition Sciences Program at the University of Washington in Seattle as saying that "Obesity is a toxic result of a failing economic environment."[iii] Providing nutrition information on menus and menu boards will allow people to choose healthier options as they turn to fast-food and value menus to feed themselves and their families in this recession.

As other businesses struggle in this economy, many fast-food restaurants experience increased earnings. McDonald's, Chic-Fil-A, and Yum! Brands all reported increased profits last quarter. McDonald's Chief Executive, Jim Skinner, was quoted in the *Chicago Tribune* as saying "today's market conditions play to our strengths." In addition, menu labeling has not posed a significant financial burden in New York City where their policy has been in effect since last July. There is no reason to expect that menu labeling will be a financial burden in Connecticut either.

A statewide poll shows that 82% of Connecticut residents support requiring chain restaurants to post nutrition information on their menus. National polls also have shown that the vast majority of customers (78%) want restaurants to require that nutrition information be posted on menus (see list of poll summaries).

A recent survey conducted in New York City by Technomic, Inc., a food industry research group, showed that 89% of those surveyed are in favor of the menu labeling policy there. Furthermore, 82% report that it impacted their food choices. The survey concluded that "The negative impact of failing to adequately respond to consumer demands is obviously lost business and market share."[iv] Considering the overwhelming public support for menu labeling, not posting nutrition information on the menu as the public wants could lead to a loss of business; not the contrary.

Menu labeling is an affordable way to address the growing obesity problem. Restaurants change their menus regularly for marketing purposes, and SB1080 gives restaurants over a year to reprint menus with the nutrition information. Additionally, menu analysis software is accurate, readily available, and inexpensive. Software to estimate the caloric and other nutritional content of menu items is available for as little as $500.

Contrary to what the restaurant industry has claimed, menu labeling is simple and low-cost. More importantly, it is important to the public's health. Nutrition labeling in restaurants is needed because eating out is no longer an infrequent, special occasion. Americans are eating out twice as much as in the 1970s. Away-from-home foods now provide one-third of adults' and children's calorie intake, on average.

Menu labeling policies have been introduced in over 30 states and localities across the country, as well as in the U.S. Congress. Federal menu labeling legislation will soon be reintroduced by Senator Harkin and Representative DeLauro, and is supported by the public health community. This legislation, the MEAL Act, will not preempt existing state policies. As you may know, federal legislation takes a very long time to move through Congress. Connecticut state policy makers should not wait for federal action. I encourage you to act now to help address obesity in Connecticut and pass SB1080.

I hope that Connecticut will be the next state to require menu labeling at chain restaurants. Menu labeling would give residents an important new tool to help them watch their weight from what is a growing and all-too-often problematic part of their diets. I would be happy to answer any questions or provide additional information.

[i] Hector Munoz, Burger King Corporation. Declaration in *New York State Restaurant Association v. New York City Board of Health* (S.D. NY), p. 2.

[ii] Ludwing D, Pollack H. "Obesity and the Economy: From Crisis to Opportunity." *Journal of the American Medical Association* 2009, vol.301, no. 5, pp. 533-535.

[iii] Stoddard E. "Will Americans put on 'recession-pounds'?" *Reuters.com* 9 Jan 2009. < http://www.reuters.com/article/lifestyleMolt/idUSTRE50805W20090109>

[iv] Technomic, Inc. *Executive Summary, UPDATE: Consumer Reaction to Calorie Disclosure on Menus/Menu Boards in New York City*. February 2009. On-line survey conducted January 30-February 3, 2009 with 755 consumers who live in the five New York City boroughs.

SUMMARY OF POLLS ON NUTRITION LABELING IN RESTAURANTS

Question	Poll	% Support/Agree
National Polls		
Fast-food and other chain restaurants should list nutritional information, such as calories, fat, sugar or salt content on menus and menu boards	Caravan Opinion Research Corp., 2008	78
Restaurants should make nutrition information available for all menu items	ARAMARK Corp., 2005	83
Menu boards should list nutrition information for all items served	Technomic Inc., 2007	74
Restaurants should be required to provide nutrition information, including calories, on menus	Global Strategy Group, 2003	67
Restaurant foods are significantly contributing to obesity	Technomic, Inc., 2006	86
Restaurant goers are concerned about saturated fat (78%), trans fat (75%), calories (73%), and sodium (64%)	Technomic, Inc., 2006	64-78
State and Local Polls		
Support requiring fast-food and chain restaurants to display calorie content on menus or menu boards	End Hunger Connecticut, 2007	82
Support requiring fast-food and chain restaurants to post nutrition information on their menus	California Center for Public Health Advocacy, 2007	84
New Yorkers who think NYC menu labeling law is a positive move	Technomic, Inc., 2009	89

- ARAMARK Corp., 2005, nationwide online survey of 5,297 adults. As cited by Nanci Hellmich. "Diners Want More Info and Smaller Entrees." October 19, 2005. http://www.usatoday.com/news/health/2005-10-19-diners-less-food_x.htm
- California Center for Public Health Advocacy; 523 respondents in California. Field Research Corporation poll conducted March 20-31, 2007. http://www.publichealthadvocacy.org/PDFs/fieldpollresults.pdf
- Caravan Opinion Research Corp., February 28 – March 2, 2008, nationwide poll of 1,003 adults.

SUMMARY OF POLLS ON NUTRITION LABELING IN RESTAURANTS

- End Hunger Connecticut!; 501 respondents in Connecticut. Center for Survey Research and Analysis at the University of Connecticut, poll conducted April 17 and Apri1 23, 2007. http://www.endhungerct.org/PDF/pollresults.pdf
- Global Strategy Group, September 4 - 8, 2003, nationally representative poll.
- Technomic, Inc. Online survey of 755 New York City adults. "UPDATE: Consumer Reaction to Calorie Disclosure on Menus/ Menu Boards in New York City." February 2009.
- Technomic Inc.'s Nutritrack Consumer Nutrition Insights online survey. May 2007; 2,500 respondents nationwide.
- Technomic, Inc., 2006; December 8-10, 2006 online survey of 488 restaurant goers nationwide. "Special Survey Results: Restaurant Goer Attitudes toward the New York City Ban on Trans Fat Use in Restaurant Foods." December 2006.

Summary of Findings:
Influence of Nutrition Information Provision

People want nutrition information from restaurants; 78% of Americans support menu labeling policies (Caravan Opinion Research, 2008). In addition, they need it. Consumers, and even nutrition professionals, are **unable to accurately estimate the calorie content of popular restaurant foods** (Technomic, 2008; CCPHA, 2007; End Hunger Connecticut, 2007; Wansink & Chandon, 2007; Burton et al., 2006; Kozup et al., 2003; Backstrand et al., 1997).

Studies have found that the provision of **nutrition information for packaged foods** (Fitzgerald et al., 2008; Variyam 2008; Variyam & Cawley, 2006; Lin & Lee, 2003; Kral et al., 2002; Kim et al., 2001; Kristal et al., 2001; Finke, 2000; Kim et al., 2000; Mathios, 2000; Neuhouser et al., 1999; Kreuter et al., 1997; Ford et al., 1996; Russo et al., 1986) and **away-from-home foods** (Bassett, 2008; Technomic, 2008; Burton et al., 2006; Conklin et al., 2005, Yamamoto et al., 2005; Burton & Creyer, 2004; Cranage et al., 2004; Kozup et al., 2003; Balfour et al., 1996; Cincirpini 1984; Milich et al., 1976) can have a **positive influence on food-purchase decisions**.

Packaged Food Labeling Studies

- Crutchfield S et al. "The Economic Benefits of Nutrition Labeling: A Case Study for Fresh Meat and Poultry Products." *Journal of Consumer Policy* 2001;24:185-207. The U.S. Department of Agriculture estimated the economic benefits of extending nutrition labeling on packaged foods to fresh meat and poultry to be $62 million to $125 million per year due to reduced intakes of saturated fat and cholesterol and the prevention of stroke, heart disease and cancer.

- Finke MS. "Did the Nutrition Labeling and Education Act Affect Food Choices in the United States?" *The American Consumer and the Changing Structure of the Food System Conference*. Arlington, VA: Economic Research Service, USDA, 2000. The author assessed fat intake and label use from the 1989 (prior to the implementation to the Nutrition Labeling and Education Act [NLEA]) and 1995 (post-NLEA implementation) Continuing Survey of Food Intakes by Individuals (CSFII) and Diet and Health Knowledge Survey. Multivariate analysis revealed that people who often used food labels in 1995 (post-NLEA) were more likely to eat a low-fat diet than people who often used 1989 food labels (pre-NLEA). The likelihood of eating a low-fat diet in the 1995 sample was 37% higher for people who often used food labels than for people who rarely used labels.

- Fitzgerald N et al. "Nutrition Knowledge, Food Label Use, and Food Intake Patterns among Latinas with and without Type 2 Diabetes." *Journal of the American Dietetic Association* 2008;108:960-967. A study of 201 Latinas with

and without type 2 diabetes found that after adjusting for likely confounders, using food labels to choose high-fiber foods was associated with eating more fruits and vegetables, and using labels to choose low-sodium foods was associated with lower salty snack intake.

- Food and Drug Administration, U.S. Department of Health and Human Services. *Federal Register* 1999;64:62772-62774. The U.S. Food and Drug Administration (FDA) estimated that requiring trans fat to be listed on packaged-food labels would save 2,100 to 5,600 lives a year and $3 billion to $8 billion a year.

- Ford GT, Hastak M, Mitra A, Ringold DJ. "Can Consumers Interpret Nutrition Information in the Presence of a Health Claim? A Laboratory Investigation." *Journal of Public Policy and Marketing* 1996;15:16-27. Nutrition information on frozen dinners had a strong effect on consumer beliefs regarding the products.

- Kim SY et al. "Food Label Use, Self-Selectivity, and Diet Quality." *Journal of Consumer Affairs* 2001;35:346-363. The authors used the USDA's 1994-1996 Continuing Survey of Food Intakes by Individuals (CSFII) and the Diet and Health Knowledge Survey. The results show that food label use has a positive effect on diet quality as measured by the Healthy Eating Index.

- Kim SY et al. "The Effect of Food Label Use on Nutrient Intakes: An Endogenous Switching Regression Analysis." *Journal of Agricultural and Resource Economics* 2000;25(1):215-231. Using the USDA's 1994-1996 Continuing Survey of Food Intakes by Individuals (CSFII) and the Diet and Health Knowledge Survey, the authors found that food label use decreases average daily intake of fat, saturated fat, sodium, and cholesterol and increases intake of fiber.

- Kral TVE, Roe LS, Rolls BJ. "Does Nutrition Information about the Energy Density of Meals Affect Food Intake in Normal-Weight Women?" *Appetite* 2002;39:137-145. The relationship between dietary restraint (that is, whether or not the consumer was consciously trying to regulate food consumption for the purpose body weight regulation) and food intake differed depending on whether or not nutrition information was presented. While the intake of food by restrained eaters was not influenced by information provision, unrestrained eaters consumed less food when nutrition information was presented.

- Kreuter MW et al. "Do Nutrition Label Readers Eat Healthier Diets? Behavioral Correlates of Adults' Use of Food Labels." *American Journal of Preventive Medicine* 1997;13:277-283. A survey of 885 patients from four family medicine clinics found that patients eating less fat and more fruits, vegetables, and fiber were more likely to report that food labels influence their food purchase decisions.

- Kristal AR et al. "Predictors of Self-initiated, Healthful Dietary Change." *Journal of the American Dietetic Association* 2001;101:762-766. A cohort study of 838 men and women found that food label use was one of the strongest predictors of decreased fat intake, but was not linked with changes in fruit and vegetable consumption.

- Lin CTJ and Lee JY. "Dietary Fat Intake and Search for Fat Information on Food Labels: New Evidence." *Consumer Interests Annual* 2003;49:1-3. The Food and Drug Administration and Florida Department of Citrus used simultaneous-equation modeling of data from the USDA 1994-96 Continuing Survey of Food Intakes by Individuals (CSFII) and Diet and Health Knowledge Survey. They found that the less a person used food labels the higher the percentage calories from fat in a person's diet (and vice versa, the more fat in the diet, the less likely a person was to have used food labels).

- Mathios AD. "The Impact of Mandatory Disclosure Laws on Product Choices: An Analysis of the Salad Dressing Market." *Journal of Law and Economics* 2000;43:651-675. The impact of the Nutrition Labeling and Education Act (NLEA) was assessed using nutrition label information and supermarket scanning data from a supermarket chain in New York. The author found a significant decrease in the sales of higher fat salad dressings after they were required to be labeled.

- Moorman C. "Market-level Effects of Information: Competitive Responses and Consumer Dynamics." *Journal of Marketing Research* 1998;35:82-98. The author assessed the effects of packaged food labeling between 1987 to 1993 and 1993 to 1996 on 124 brands in 21 product categories. She found an increase in the addition of positive nutrients to products after labeling went into effect, but did not find more deletions of negative nutrients from products. However, Moorman did find an increase in brand extensions involving the deletion of negative nutrients from products between 1993 and 1996.

- Neuhouser ML et al. "Use of Food Nutrition Labels Is Associated with Lower Fat Intake." *Journal of the American Dietetic Association* 1999;99:45-50,53. A survey of 1,450 adults found that food label use was significantly associated with lower fat intake.

- Russo JE et al. "Nutrition Information in the Supermarket." *Journal of Consumer Research* 1986;13:48-70. Posting prominent lists of added sugars information for breakfast cereals in a supermarket resulted in 1) a decrease in the average sugar per ounce of cereal purchased and 2) increased market share for low-sugar brands and a decrease in the share of high-sugar brands compared to a store without posted nutrition information.

- Variyam JN. "Do Nutrition Labels Improve Dietary Outcomes?" *Health Economics* 2008;17:695-708. Using difference-in-difference models the author found that food label use is associated with higher intakes of fiber and iron as compared to people who do not use labels.

- Variyam JN and Cawley J. *Nutrition Labels and Obesity.* NBER Working Paper No. W11956, January 2006. Using a difference-in-differences method and National Health Interview Survey data, the authors estimated the effects of NLEA. They found that Nutrition Facts labeling was associated with a decrease in body weight and the likelihood of obesity for the overall population, with the main effect on non-Hispanic white women. The economic benefit of this effect on body weight was estimated to be $63 to $166 billion over 20 years.

Identifying Healthier Options at Restaurants Is Difficult

- Backstrand J, Wootan MG, Young LR, Hurley J. *Fat Chance*. Washington, DC: Center for Science in the Public Interest, 1997. A study conducted by the Center for Science in the Public Interest and New York University found that even well-trained nutrition professionals could not accurately estimate the calorie content of typical restaurant meals. Although the dietitians were able to accurately estimate the caloric content of a cup of whole milk (the control in the study), they consistently underestimated the calories in restaurant foods and meals. Their estimations were off by large amounts – by 200 to 600 calories. For example, when shown a typical dinner-house hamburger and onion rings, the dietitians on average estimated that it had 865 calories, when it actually contained 1,550 calories.

- Burton S et al. "Attacking the Obesity Epidemic: The Potential Health Benefits of Providing Nutrition Information in Restaurants." *American Journal of Public Health* 2006;96:1669-1675. Burton and his colleagues explored how much the average consumer knows about the calories, fat and other macronutrient levels found in foods served at restaurants. Their results show that consumers substantially underestimated the levels of calories, fat, saturated fat, and cholesterol found in many less healthful menu items.

- California Center for Public Health Advocacy (CCPHA). Statewide poll on March 20-31, 2007 conducted by Field Research Corporation of 523 registered California voters. Accessed at www.publichealthadvocacy.org/menulabelingpoll.html. A representative, state-wide telephone poll in California found that few Californians are able to identify from among popular fast-food and other chain restaurant menu items those with the fewest/most calories, salt, or fat. Not a single respondent answered all four questions correctly. Less than 1 percent answered three of four questions correctly, only 5 percent answered two of the four questions

correctly, and nearly 68 percent were unable to answer even one question correctly. Scores were equally poor regardless of education or income levels.

- Equivalent results were found from a similar state-wide poll in Connecticut (End Hunger Connecticut. State-wide poll conducted between April 17 and April 23, 2007 by the Center for Survey Research and Analysis at the University of Connecticut of 501 Connecticut residents. Accessed at www.endhungerct.org/PDF/pollresults.pdf).

❖ Kozup KC, Creyer EH, Burton S. "Making Healthful Food Choices: The Influence of Health Claims and Nutrition Information on Consumers' Evaluations of Packaged Food Products and Restaurant Menu Items." *Journal of Marketing* 2003;67:19-34. A series of laboratory studies demonstrated that many consumers have very little knowledge of the high levels of calories, fat, and saturated fat found in many popular, less healthful restaurant items. For example, for some items such chicken fajitas and chef salad, actual calorie levels were twice what consumers expected.

❖ Technomic, Inc., February 2009. An on-line survey was conducted January 30- February 3, 2009 with 755 adults who live in the five New York City (NYC) boroughs. Of the people who have seen menu labeling at chain restaurants, 89% have been surprised by the calorie counts, with 90% finding the calories higher than expected.

❖ Wansink B and Chandon P. "Meal Size, Not Body Size, Explains Errors in Estimating the Calorie Content of Meals." *Annals of Internal Medicine* 2006;145:326-332. In two studies of 1) 105 lunchtime diners and 2) 40 undergraduate students, people underestimated the calorie content of fast-food meals by an average of 23% in study 1 and by 9% in study 2. Participants greatly underestimated the calories in larger fast-food meals, but more accurately estimated the calories in smaller meals.

Restaurant Labeling Studies

❖ Balfour D, Moody R, Wise A, Brown K. "Food Choice in Response to Computer-Generated Nutrition Information Provided about Meal Selections in Workplace Restaurants." *Journal of Human Nutrition and Dietetics* 1996;9:231-237. Employees in two worksite cafeterias were provided the opportunity to view nutrition information on computers in the cafeteria. Half (45%) opted to view the nutrition information. Of those, approximately, 15% changed what they ordered; their second (informed) choice was lower in calories and saturated fat.

❖ Bassett MT, Dumanovsky T, Huang C, Silver LD, Young C, Nonas C, Matte TD, Chideya S, Frieden TR. "Purchasing Behavior and Calorie Information at Fast-Food Chains in New York City, 2007. *American Journal of Public Health*

2008;98. A survey of 7,318 customers from 275 fast-food restaurants found that the average caloric content of fast-food restaurant lunches was 827 calories; 34% of purchased lunches contained over 1,000 calories. Subway customers who saw nutrition information in the restaurant purchased meals with an average of 52 fewer calories than people who did not see the information. A third of the Subway customers (37%) reported that the nutrition information affected their purchases; those customers purchased meals with 99 fewer calories than those who saw the information and reported it had no effect.

- Burton S, Creyer EH, Kees J, Huggins K. "Attacking the Obesity Epidemic: The Potential Health Benefits of Providing Nutrition Information in Restaurants." *American Journal of Public Health* 2006;96:1669-1675. Burton et al. found that when objective, quantitative nutrition information was provided, consumers had more unfavorable attitudes towards the less healthful menu options. Consumers' purchase intentions for the less healthful items were significantly diminished by the provision of nutrition information.

- Burton S and Creyer EH. "What Consumers Don't Know Can Hurt Them: Consumer Evaluations and Disease Risk Perceptions of Restaurant Menu Items." *Journal of Consumer Affairs* 2004;38:121-145. Burton and Creyer found that when favorable nutrition information was presented on restaurant menus, consumers had more favorable attitudes towards the items and higher purchase intentions. When unfavorable nutrition information was presented, there was a negative influence on product attitudes and purchase intentions. The authors note that the results imply that if restaurants were required to disclose nutrition information, consumers would be more likely to choose more healthful menu items. In addition, requiring restaurants to provide nutrition information may encourage restaurants to improve the healthfulness of their menu options.

- Caravan Opinion Research Corp., February 28 – March 2, 2008, accessed at http://www.cspinet.org/new/pdf/census_menu_board_question.pdf). A nationally representative poll of 1,003 adults found that 78% of Americans believe fast-food and other chain restaurants should list nutritional information, such as calories, fat, or salt, on menus and menu boards.

- Center for Weight and Health, University of California, Berkeley and California Center for Public Health Advocacy. *Potential Impact of Menu Labeling of Fast Foods in California*. August 2009. Accessed at http://www.publichealthadvocacy.org/menulabeling.html. The U.C. Center for Weight and Health calculated that, on an annual basis, menu labeling could reduce the average adult fast-food patron's yearly intake by 9,300 calories, preventing the equivalent of 2.7 pounds of weight gain per person per year. If 80% of patrons see the nutrition information, menu labeling could result in prevention of 40 million pounds of weight gain annually for the entire state of

California; or an average of a one pound weight loss per person per year, rather than the current average weight gain of one pound per person per year.

- Cinciripini PM. "Changing Food Selections in a Public Cafeteria: An Applied Behavior Analysis." Behavior Modification 1984;8:520-539. Calorie information was provided on two large signs at each entrance of a university cafeteria. 5542 observations of undergraduates during lunch time found that providing calorie information was associated with reductions in consumption of red meat, carbohydrates, and regular dairy products. It also resulted in increased intakes of salads, vegetables, fruits, soup, and low-fat dairy products and a decrease in desserts and sauces for obese females.

- Conklin MT, Lambert CU, Cranage DA. "Nutrition Information at Point of Selection Could Benefit College Students." *Topics in Clinical Nutrition* 2005;20:90-96. Conklin, Lambert, and Cranage examined the use of nutrition and ingredient information by college freshman at the point of sale in campus dining facilities. Results showed that females were more likely than males to use the nutrition information labels to make food choices. Whereas females used to nutrition information to identify and select lower fat, lower calorie foods, males used the information to select foods with higher levels of protein. These results confirm the findings of a previous study that found that the provision of nutrition information can have a positive influence on the food purchase behaviors of college students.

- Cranage DA et al. "Effect of Nutrition Information on Perceptions of Food Quality, Consumption Behavior, and Purchase Intentions" *Journal of Foodservice Business Research* 2004;7(1):43-61. When nutrition information was displayed for entrée items in a restaurant setting, lower fat, lower calorie entrées were chosen more often and higher fat, higher calorie entrées were chosen less often.

- Kozup KC, Creyer EH, Burton S. "Making Healthful Food Choices: The Influence of Health Claims and Nutrition Information on Consumers' Evaluations of Packaged Food Products and Restaurant Menu Items." *Journal of Marketing* 2003;67:19-34. A series of laboratory studies conducted by Kozup and his colleagues demonstrated that many consumers have very little knowledge of the high levels of calories, fat, and saturated fat found in many popular, less healthful restaurant items. For example, for some items such chicken fajitas and chef salad, actual calorie levels were twice what consumers expected. When levels of calories, fat, and saturated fat substantially exceeded consumers' expectations, the provision of nutrition information had a significant negative effect on product attitude, purchase intention, and choice. The authors suggest that the provision of nutrition information on restaurant menus could potentially have a positive impact on public health by reducing the consumption of less healthful menu items.

- Milich R, Anderson J, Mills M. "Effects of Visual Presentation of Caloric Values on Food Buying by Normal and Obese Persons." *Perceptual and Motor Skills* 1976;42:155-162. In a study in a cafeteria setting, signs indicating the calorie content of available foods significantly decreased the number of calories that people ordered.

- New York City Department of Health and Mental Hygiene (NYCDHMH). *Notice of Adoption of Resolution to Repeal and Reenact §81.50 of the New York City Health Code.* New York City: NYCDHMH, January 2008. Using conservative estimates, the New York City Department of Health and Mental Hygiene estimated that, over the next five years, its menu labeling policy for fast-food and other chain restaurants would lead to at least 150,000 fewer New Yorkers being obese, resulting in at least 30,000 fewer cases of diabetes.

- Simon P, Jarosz CJ, Kuo T, Fielding JE. *Menu Labeling as a Potential Strategy for Combating the Obesity Epidemic: A Health Impact Assessment.* Los Angeles, CA: County of Los Angeles Public Health, Division of Chronic Disease and Injury Prevention, May 2008. Using conservative estimates, Los Angeles County Public Health estimated that menu labeling could prevent 39% of the 6.75 million pounds gained annually in Los Angeles County for people 5 years and older. The impact would be greater if larger proportions of people ordered fewer calories per restaurant meal.

- Technomic, Inc. poll, February 2009. An on-line survey was conducted January 30- February 3, 2009 with 755 adults who live in the five New York City (NYC) boroughs to assess the NYC menu labeling law. 89% responded that they read calorie information on menus at chain restaurants. Of those who visited restaurants with posted information, 82% report that the nutrition information on menus has made an impact on their ordering; they are ordering lower calorie options, are no longer ordering certain menu items, or are ordering smaller portion sizes.

- Yamamoto JA et al. "Adolescent Fast Food and Restaurant Ordering Behavior with and without Calorie and Fat Content Menu Information." *Journal of Adolescent Health* 2005;37:397-402. 106 adolescents ordered dinner from three different restaurant menus without and then with nutrition information. The provision of nutrition information on the menu resulted in the selection of meals with lower calorie and fat content on average from two out of the three restaurant menus. About a third of the teens changed at least one of their meal orders when provided with menu labeling.

Updated 10/08